MIOSHA Training Institute

MIOSHA Michigan Occupational Safety and Health Administration

Macomb Community College

Elements of a Safety & Health Management System

Student Materials
MTI Level One Course
Consultation Education & Training Division
Michigan Occupational Safety & Health Administration
Michigan Department of Licensing and Regulatory Affairs
www.michigan.gov/miosha
(517) 284-7720

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(Revised 11/14)

MIOSHA Michigan Occupational Safety and Health Administration

Elements of a Safety & Health Management System (SHMS)

MTI Level One Certificate Course

Presented By:

Consultation Education & Training (CET) Division

Michigan Occupational Safety & Health Administration

Michigan Department of Licensing & Regulatory Affairs

www.michigan.gov/miosha

(517) 284-7720

Welcome!

- Understanding the big picture is critical to successfully managing a company's safety and health management system. The primary emphasis of the seminar is to address the five core elements of an effective safety and health system and those central issues that are critical to each element's proper management.
- To get the most out of this course, it's important that everyone freely share their knowledge and experience with the class, so don't hesitate.

group activity

individual activity

class discussion

2

Objectives

1. Define SHMS
2. Gain a greater understanding of a SHMS
3. Define the 5 Critical Elements
4. Plan Evaluation
5. Group Techniques

3

Objective 1

Define a SHMS

"Safety & Health Management System"

4

Definition

A Safety and Health Management System (SHMS)

is a systematic and organized approach to manage and reduce safety and health hazards by integrating safety and health programs, policies, and objectives into the organization.

5

SHMS

- Simply stated, a SHMS is a set of safety and health program components that interact in an organized way.
- An organized framework for identifying, managing and reducing safety & health hazards.

6

What is a SHMS?

- For example, an employer finds an unsafe condition during a routine safety inspection of the facility.
- If an SHMS is implemented, the employer will not only seek to improve the condition to meet MIOSHA compliance, but will seek a long-term solution to ensure the non-compliant condition will not reoccur.

7

Systems Working Together

An organization is a collection of **systems.**

Merriam-Webster.com defines systems as:

"A regularly interacting or interdependent group of items forming a unified whole"

8

Other Management Systems

Human Resources – consists of policies, procedures and practices related to employment.

Quality Management – such as ISO 9000, is a family of standards that prescribes specifications for an organization to meet the customer's quality requirements..

9

Safety & Health Balance

- These include production, sales, and quality control. To be most effective, safety and health must be balanced with, and incorporated into, the other core business processes.

10

Systems Interaction

- Quality
- Safety & Health
- Production
- Maintenance
- Product
- Regulatory Agencies
- Material Handling
- Purchasing
- Customers
- Outside Contractors
- Suppliers
- Human Resources
- Environmental

11

"Every system is designed perfectly to produce what it's producing."

- What might be the result if a safety plan is poorly written or not effectively implemented?
- Where do we look for clues that safety system design and/or implementation are flawed?

12

Results of a systems approach

An effective system supports the organization's philosophy.

Safety and health policies and goals are clearly communicated.

Accountability for implementing the system is understood and accepted.

13

Results of a systems approach

Long-term solutions are implemented rather than one-time fixes.

Evaluation of results over time promotes continual improvement.

An effective system positively impacts the company's bottom line.

14

Objective 2

Gaining a greater understanding

15

SHMS is unique

- An effective SHMS must be uniquely designed for each organization. It is not a "one size fits all."

16

Why implement a SHMS?

- A SHMS adds value to the workplace!
- Everyday, workplace injuries, illnesses and fatalities cause immeasurable pain and suffering to employees and their families.
- It's the right thing to do.

17

What benefits can this add?

- Besides protecting workers, the benefits of implementing a safety and health management system include:

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Added benefits:

- Lowered workers' compensation costs due to fewer injuries.
- Increased productivity, efficiency, and product quality.
- Increased employee morale and well being.

19

Added benefits:

- Lower absenteeism and employee turnover.
- Reduced lost workdays.
- Compliance with standards and regulations.

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Added benefits:

- Reduced lost workday injuries.
- VPP Sites have SHMS implemented.
  - The average VPP worksite has a Days Away Restricted or Transferred (DART) case rate of 52% below the average for its industry.

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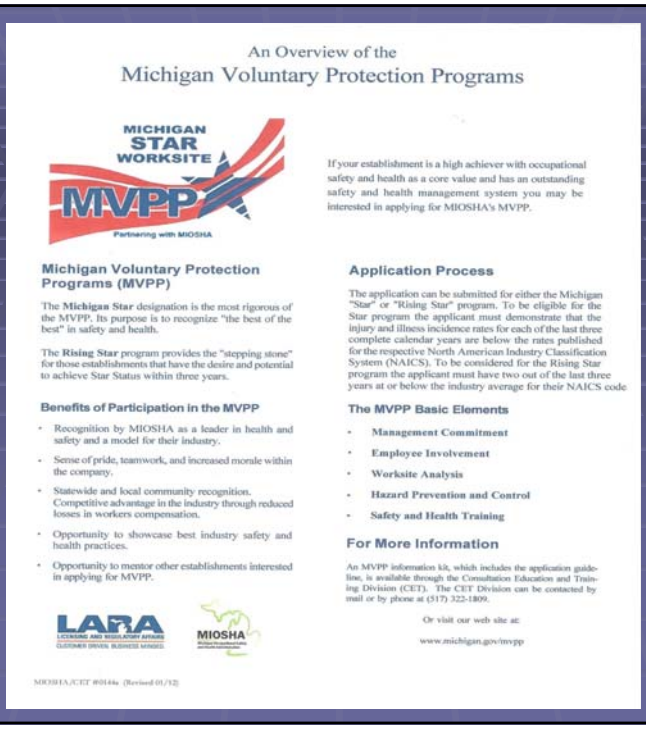

An Overview of the
Michigan Voluntary Protection Programs

MICHIGAN STAR WORKSITE MVPP Partnering with MIOSHA

If your establishment is a high achiever with occupational safety and health as a core value and has an outstanding safety and health management system you may be interested in applying for MIOSHA's MVPP.

Michigan Voluntary Protection Programs (MVPP)

The **Michigan Star** designation is the most rigorous of the MVPP. Its purpose is to recognize "the best of the best" in safety and health.

The **Rising Star** program provides the "stepping stone" for those establishments that have the desire and potential to achieve Star Status within three years.

Benefits of Participation in the MVPP

- Recognition by MIOSHA as a leader in health and safety and a model for their industry.
- Sense of pride, teamwork, and increased morale within the company.
- Statewide and local community recognition. Competitive advantage in the industry through reduced losses in workers compensation.
- Opportunity to showcase best industry safety and health practices.
- Opportunity to mentor other establishments interested in applying for MVPP.

Application Process

The application can be submitted for either the Michigan "Star" or "Rising Star" program. To be eligible for the Star program the applicant must demonstrate that the injury and illness incidence rates for each of the last three complete calendar years are below the rates published for the respective North American Industry Classification System (NAICS). To be considered for the Rising Star program the applicant must have two out of the last three years at or below the industry average for their NAICS code

The MVPP Basic Elements

- **Management Commitment**
- **Employee Involvement**
- **Worksite Analysis**
- **Hazard Prevention and Control**
- **Safety and Health Training**

For More Information

An MVPP information kit, which includes the application guideline, is available through the Consultation Education and Training Division (CET). The CET Division can be contacted by mail or by phone at (517) 322-1809.

Or visit our web site at:

www.michigan.gov/mvpp

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MIOSHA

MIOSHA/CET #0144x (Revised 01/12)

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Added benefits:

- Reduction or elimination of property damage due to incidents.
- Reduced business interruption costs.
- Reduced impact on the environment due to incidents.

23

Added benefits:

- **Improved productivity and quality**. The systematic requirements of an SHMS leads to a healthier, safer workforce with fewer mistakes and less downtime.

24

Added benefits:

- When managers emphasize employee participation in SHMSs, employees have the opportunity to take ownership of their work environment and their contributions have proven to be tremendous.

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Question

- **How can a company benefit from implementing an SHMS?**

A. Fewer work-related injuries, illnesses and deaths
B. Lower employee turnover
C. Higher employee morale
D. Lower workers' compensation costs
E. All of the above

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Safety and Health Program Check-Up

- To find out how your safety and health program measures up, complete the following survey.
- There is no right or wrong answers.
- This checkup will help identify areas where improvements can be made.

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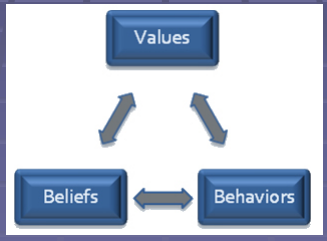
Creating a Safety Culture

- Management must create a culture where “safety and health” are a value, not just priorities.



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Can culture impact safety performance?

- Organizational culture refers to the driving values of an organization, or in simple terms, the “unwritten rules” of the company.

29

Organizational Culture

- Effective leaders look realistically at culture and identify issues that could undermine safety objectives.

30

Organizational Culture

- Leadership drives the culture of an organization.
- Safety leadership refers to seeing the right things to do to reach objectives and motivating the teams to accomplish them effectively.

31

Organizational Culture

- Safety leadership is exercised by decision making which is related to the beliefs of the leader and demonstrated by his or her behavior.

32

Positive Culture

- Companies that effectively manage their SHMS will most likely have a positive safety culture and a high level of safety performance.

33

Class Discussion

34

Objective 3

Define the 5 critical elements

An effective SHMS consists of five critical elements that apply safety and health management practices of employers who have been successful in protecting the safety and health of their employees.

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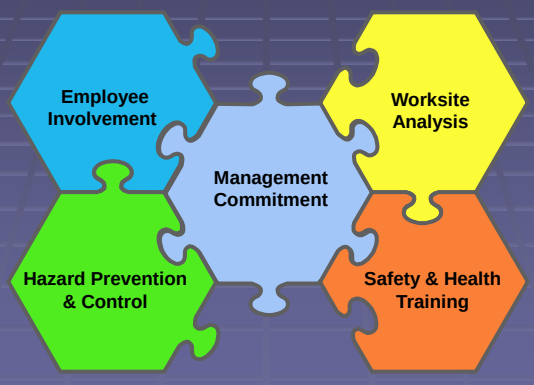
MIOSHA'S MODEL



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1st Critical Element
1. Management Commitment

- All organizations must embrace a culture where all members actively manage workplace safety and health by implementing a comprehensive safety and health management system.

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Core Management Issue

- If your company wants to reduce accidents, injuries, illnesses, and their related costs, ***everyone*** must place as much emphasis on safety and health issues as they place on other core management issues.

38

Communicate & Demonstrate

- Management must communicate, and continually demonstrate, to employees that safety and health issues must be factored into all aspects of business operations

39

S & H Must be a Priority

- Employees, supervisors and managers must perceive that safety is not just “today’s priority” subject to change tomorrow.
- Regards worker safety and health as a fundamental value
- Applies commitment to safety and health equally with other objectives

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Management Leadership

- Workplace safety is a right and responsibility. Act 154 Sec.11(a) Duties of Employer:
- Furnish to each employee, employment and a place of employment that is free from recognized hazards that are causing, or are likely to cause, death or serious physical harm to the employee.
- Your employees have a right to a safe workplace and must be involved in keeping it that way.

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Traits of Success Managers

- Getting out where you can be seen, informally or through formal inspections.
- Being accessible.
- Being an example, by knowing and following the rules employees are expected to follow.
- Being involved by participating on the workplace Safety and Health Committee.

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Show your commitment by:

- Writing a company safety & health policy that emphasizes what safety means to your business and states your expectations for all employees.
- Include your program's safety and health goals and reinforce your belief that workplace safety is a responsibility that all your employees share.

43

Show your commitment by:

- The most important thing you can do for your safety program is to believe that safe production is the only way to do business
- Making sure your employees follow safe work practices — and you follow them, too.

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Pfizer Corporation MVPP Star Award Ceremony, May 2008

45

Characteristics of an Effective SHMS

- Easy to understand and implement
- Needs to be used and understood by all employees
- SHMS should be adaptable to allow changes and improvements in your organization.

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Show your commitment by:

- Giving your employees the authority they need to carry out their safety responsibilities.
- Budgeting the time and resources to achieve your workplace safety goals.

47

Successful Implementation

- Requires work to implement
- Must be supported by management
- Safety Committee involvement
- Ensure adequate time and resources to train employees on all systems

48

Show your commitment by:

- Acting on the recommendations from your safety committee or safety meeting group.
- Making sure your employees have the safety and health training they need to do their jobs.

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Periodic reviews or audits

- Reviews of the SHMS will help identify:
  - Problems or deficiencies in the system
  - Develop corrective actions
  - Keep you on track to meet goals and objectives

50

Question

- To increase the likelihood of developing an effective SHMS, you should only include a few key personnel during the planning and implementation process.

True or False

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Identify a Key Person

- Identify a key person or staff to oversee the development of your SHMS.
- While it's good to involve all employees in the implementation of the program, someone needs to be in charge.
- The person in charge will need the authority to make changes where necessary and bring critical issues to the attention of management.

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All employees involved

While a key person or personnel should have responsibility and authority for developing the SHMS, it's essential to involve **all** employees during the planning and implementation of the program.

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Group Activity

- 20 minutes for groups to discuss amongst themselves.
- Fill out the Management Commitment – Providing Leadership Worksheet as a group and be prepared to share your findings with the class.

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Safety & Health Management Systems eTool

- Included on your flash drive is an example of a Strategic Plan for creating a SHMS.
- The Strategic Plan eTool helps you to map out your vision for safety & health and lists 13 goals to accomplish.
- Each goal is assigned to a person and has a completion date.

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Best Practice: Marathon Refinery

- *D*etroit
- *R*efinery
- *I*nvestment in the
- *V*alue of its
- *E*mployees

Drive Safety

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A Little History

- 2003 – 2005 – Marathon's Detroit Refinery safely completed Clean Fuels Expansion Project
  - Focused
  - Many Hours
  - Major Construction among existing refinery equipment
  - Finished 2005 with 1.09 OSHA recordable rate
- 2006 – We Lost our Way
  - Went from Construction Mode to Operating Mode
  - Many new employees
  - Finished year with 1.81 OSHA recordable rate

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A Little History

- 2006 – Scored lowest of the Marathon's 7 refineries in Metris Survey (perception survey)
- Millions spent on safety upgrades (e.g., expansion project, fire protection, fall protection, safety showers)
  - 2003 – 2006 featured hundreds of millions invested in equipment!
- It was time to investment in EMPLOYEES.

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Called for Help

- Partnered with a renowned third party
  - Specialty was Structured Safety
  - 30 years of experience
  - 40+ major companies
  - More than 500 facilities throughout the world
  - 33 OSHA VPP Facilities
  - Numerous Best in Class and Top Quartile Clients

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DRIVE SAFETY
Mission Statement

DRIVE Safety takes the most widely recognized tools used in our industry (Start of Shift Meetings, JSAs, What Ifs, Safety Inspections, Behavioral Based Safety and Sequential Safety Meetings) and uses them to foster a high level of employee involvement and ownership of the safety process.

DRIVE Safety **develops consistency.** The process is applied consistently across the facility.

DRIVE Safety **improves communication.** The Sequential Safety Meeting uses a strategy of flowing information from the ground level to management in sequence, ensuring employee concerns are addressed, not lost.

DRIVE Safety **develops accountability.** The application of the process is measurable.

DRIVE Safety **increases our knowledge** with regard to safety.

DRIVE Safety develops employee involvement. Employee involvement in delivering safety meetings, conducting JSAs, conducting What If Drills and Team Safety inspections breeds confidence in employees' ability to recognize hazards.

DRIVE Safety **enables all employees to become champions within the safety process.** Excelling within DRIVE Safety will help The Michigan Refining Division achieve VPP status by mastering the "Management Leadership & Employee Involvement" element of OSHA's Voluntary Protection Program.

Ultimately, the goal of DRIVE Safety is to improve employee safety by eliminating unsafe acts, injuries and accidents.

DRIVE 2010

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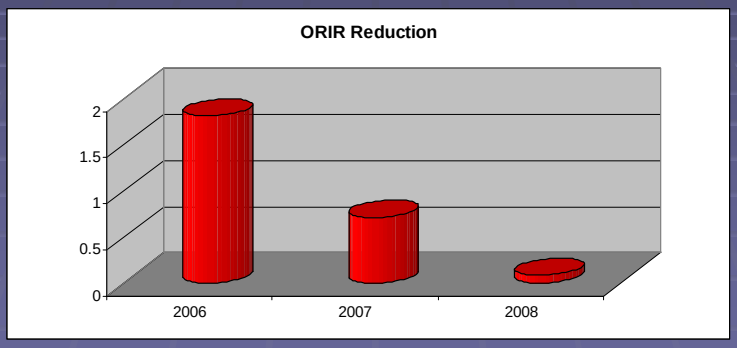
Proof is in the Process

- 2006 ORIR – 1.81
- 2007 ORIR - .71
- 2008 ORIR - .08



Marathon Petroleum Corporation

The Tools

- Front Line Supervisors assign shift / crew / team members to each task

- Team Safety Inspections
- JSAs
- Shift Starter Meetings
- What If Drills

Fosters Accountability

TEAM ACTIVITY PLAN

MONTHY UPDATE

Activity	Responsible Personnel This Month	Required Number	Actual Number Completed	Responsible Personnel Next Month
Team Safety Inspections				
Job Safety Analysis				
Shift Starter Safety Meetings				
What If Drill				

Department _____ Team _____ Month _____

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The Tools

- The Sequential Safety Meeting

Agenda

Pass-Up Concerns
MVPP Communications
DEIs/ORIR
COS Graphs/Analysis
Summary of Incident Investigations / KMS
Safety Opportunity to Share Status Report
Open/Closed Work Order Graphs
Emergency Equipment Inspections
Safety Engineering Project Status
DRIVE Safety Program
Safety Steering Committee Action Items
Manager Tier 1 Audit Finding Summary

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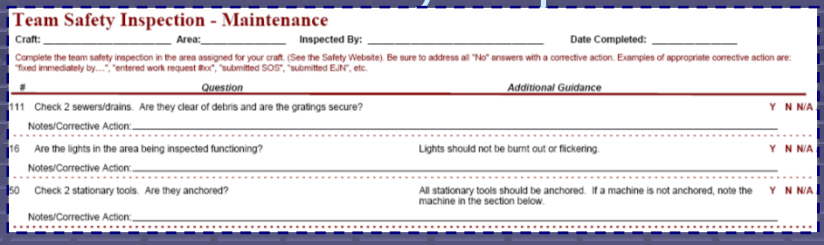
Team Safety Inspections



Team Safety Inspection - Maintenance

Craft: _____ Area:_____ Inspected By: _____ Date Completed: _____

Complete the team safety inspection in the area assigned for your craft. (See the Safety Website). Be sure to address all "No" answers with a corrective action. Examples of appropriate corrective action are: "fixed immediately by…", "entered work request #xx", "submitted SOS", "submitted EJN", etc.

#	Question	Additional Guidance	
111	Check 2 sewers/drains. Are they clear of debris and are the gratings secure?		Y N N/A
	Notes/Corrective Action:_____		
16	Are the lights in the area being inspected functioning?	Lights should not be burnt out or flickering.	Y N N/A
	Notes/Corrective Action:_____		
50	Check 2 stationary tools. Are they anchored?	All stationary tools should be anchored. If a machine is not anchored, note the machine in the section below.	Y N N/A
	Notes/Corrective Action:_____		

- Team Safety Inspections compare the actual condition of the refinery to predetermined standards.
- Each Work Group conducts a monthly Team Safety Inspection for their area of responsibility.

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Team Safety Inspections

- Checklists are created by pulling random questions from a database every month.
- Areas of responsibility rotate between different shifts/crafts to ensure that all areas are inspected throughout the course of

Complex 1 Team Safety Inspection Schedule 2009

	March	April	May	June	July	August	Sept	Oct	Nov	Dec
Shift 1	04	05	06/29	26	04	05	06/29	26	04	05
Shift 2	26	04	05	06/29	26	04	05	06/29	26	04
Shift 3	06/29	26	04	05	06/29	26	04	05	06/29	26
Shift 4	05	06/29	26	04	05	06/29	26	04	06	06/29

04	Vacuum
05	Crude
06	Crude Treaters
26	Crude Boiler FW Treating
29	Crude Wastewater

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Team Safety Inspections

Checklists are reviewed by foremen/supervisors to ensure corrective action is taken.

43 Are hanging chains covered or drawn to the side? Y (N) N/A
Notes/Corrective Action: Found 4 chains. Put up new covers.
Additional Comments:
Shift Foreman Signature: 4-16-09

The findings are reviewed by the safety department for follow-up and are tracked to provide leading indicators.

1 Inspect the bases of 2 fixed ladders. Are the bases of the ladders in good condition? Note the locations of ladders inspected in the corrective action section. Contact your foreman/safety dept to determine if ladder should be removed from service. Y (N) N/A
Notes/Corrective Action: Ladder North of 5 ... 15', one base bolt loose. Blue Tag 04/14 - Confirmed fixed 4/21/09

Marathon Petroleum Corporation

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Results!

- Lowest Recordable rate in facility and company history
- First Marathon union facility to achieve VPP
- 2008 President's Award winner for Responsible Care®
- Zero contractor recordable injuries for 2+ years
- 1,200 days without lost-time injury
- 97% participation in 2008 HES perception survey

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Key Performance Indicators (KPIs) - Accountability

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Continuous Improvement

- Currently working to improve/update tools
- Team Safety Inspections
- JSAs
- What Good Looks Like (WGLL)
- Sequential Meetings
- What if Drills

Marathon Petroleum Corporation

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2. Employee Involvement

- Employee involvement provides the means through which workers develop and express their own commitment to safety and health, for both themselves and their fellow workers.

70

Employee Involvement

- This is accomplished when employees understand the value placed on safety and health by top leadership, their own performance responsibilities and continuous learning about safety and health.

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Benefits of employee involvement

- Employees know and understand the hazards of the work they perform.
- Can provide possibly overlooked suggestions for improvement.
- Well-trained employees can ensure that new employees are properly informed of workplace hazards during on-the-job training

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Involve employees by:

- Participation in accident or incident investigations.
- Conducting workplace or departmental safety and health inspections.
- Developing and/or evaluating written safety procedures.
- Participation in safety and health committees.
- Assist in safety training of other employees.

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Employee Involvement

- You won't have a strong safety program without employee participation.
- Your employees operate the equipment, use the tools, and do the tasks that expose them to hazards so they need to be involved in the effort to keep the workplace safe.

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Employee Involvement

- Suggesting safety policies, safety-training topics, and ways to allocate safety resources.
- Suggesting ways to prevent and control hazards.

75

Why should employees be involved?

- Group decisions have the advantage of the group's wider range of experience.
- Employees are more likely to support and use programs in which they have input.

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Employee Involvement = Actively Engaged Employees

- Employees who are encouraged to offer their ideas and whose contributions are taken seriously are more satisfied and more productive on the job.

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Best Practice– Steel Industries

Safety Improvement Card

"Safety is our # 1 Priority"

Leave your work area better than you found it

Name

Date

Shift

Plant

Location of Observation/Safety

Contact

I. Mini IFE - Goal is to correct unsafe behaviors and/or unsafe conditions immediately.

Type (Circle One) Unsafe Act Unsafe Condition

Observation

Actions taken to eliminate unsafe act/condition

Incident Corrected (Circle One) Yes No

II. Safety Contact - One on one interaction with co-workers is essential to improving the safety of our plants. Opportunities for improvement and positive feedback should be shared with co-workers immediately.

Mark an "X" in appropriate box for "Safe" or "At Risk"

	S	A
A. Hands and Fingers		
1. Pinch/Cut Points		
2. PPE Appropriate		
3. Eyes/Focus on task		
B. Body Position		
1. Lifting, pushing, pulling		
2. Reaching, bending, twisting		
3. Repetitive Motion		
C. Equipment/Work Area		
1. Guarding in place		
2. Work piece properly clamped		
3. Hand and power tools in good condition		
4. Equipment or coolant oil leaks		
5. Inspect lifting devices		
6. General housekeeping (trip hazards)		

Feedback provided to co-worker or supervisor. Positive, areas for improvement, potential hazards, etc.

Mark with an "X" affected body part (s) from sections I. or II.

Best Practice
DTE 200% Accountability

DTE Energy

Everyone at DTE Energy is 200% accountable.

100% responsible for my own safety and 100% responsible for the safety of those around me

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Individual Activity

- Take 10 minutes to jot down your responses to :
  - How are employees involved with safety & health at your company?
  - What suggestion(s) do you have to improve employee involvement?

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Day 1 Summary

1. Define SHMS
2. Gain a greater understanding of a SHMS
3. Define the 5 Critical Elements
    1. Management Commitment
    2. Employee Involvement

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Day 2 objectives

Finish defining the 5 Critical Elements

1. ✔ Management Commitment
2. ✔ Employee Involvement
3. Hazard Prevention & Control
4. Worksite Analysis
5. Safety & Health Training

Plan Evaluations

Group Techniques

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3. Hazard Prevention & Control

- The best way to control a hazard is to eliminate it. If you can't eliminate it, control it so that it won't do any harm.
- The best controls also protect the worker by reducing the risk of human error, such as interlocks on guards and other "fail-safe" mechanisms

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Hierarchy of Controls

- When it is not possible to eliminate a hazard, you should control the hazard using the following methods (in order):
  - Engineering controls
  - Administrative controls
  - Personal Protective Equipment

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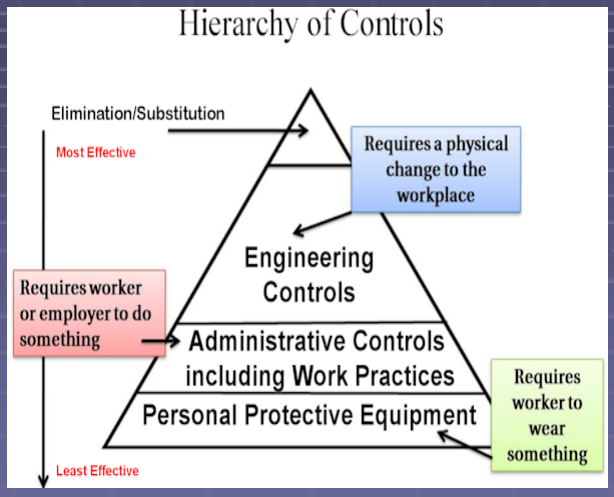
Hierarchy of Controls



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Engineering Controls

- If hazard elimination or substitution is not feasible, engineering controls should be considered next.
- Engineering controls are physical changes to the work area or process that effectively minimize a worker's exposure to hazards

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Engineering Controls

- Remove / Redirect Hazard
  - Removal or redirection of the hazard such as with local and exhaust ventilation.
- Redesign Workplace
  - Redesign of workstation to minimize ergonomic injuries.

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Engineering Controls

- Enclosed Hazard
  - Enclosure of the hazard, such as enclosures for noisy equipment – noise dampening.
- Isolate Hazard
  - Isolation of the hazard with interlocks, machine guarding, welding curtains, and other mechanisms.

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The Next Step

- If **engineering controls** are not feasible you must then consider implementing administrative controls.

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Administrative Controls

- No physical changes
- Limit time exposure to hazards by adjusting work tasks or schedules
- Written operating procedures, Work practices, and Safety and health rules for employees

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Samples of Administrative Controls

- Written procedures & practices
- Safety & Health Rules
- Alarms, signs and warnings
- Buddy system
- Training
- Stretching exercises and break policies

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Personal Protective Equipment (PPE)

- Used when hazards cannot be eliminated through engineering or administrative controls,
- Must consider personal protective equipment (PPE) necessary for employee protection

92

Which of the following statements is true?

A. PPE is the lowest level of hazard control.

B. PPE may be used with engineering and administrative controls for the most effective control measures.

C. PPE is considered first when implementing hazard controls.

D. A and B, only

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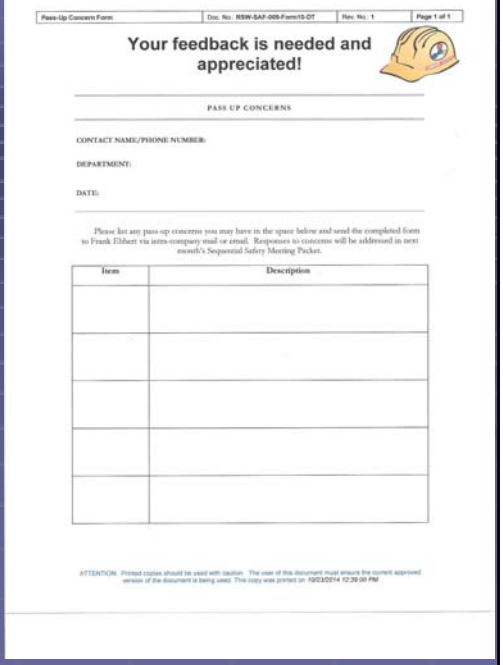
Best Practice Marathon



Your feedback is needed and appreciated!

PASS UP CONCERNS

CONTACT NAME/PHONE NUMBER:

DEPARTMENT:

DATE:

Please list any pass-up concerns you may have in the space below and send the completed form to Frank Ehbert via intra-company mail or email. Responses to concerns will be addressed in next month's Sequential Safety Meeting Packet.

Item	Description

4. Worksite Analysis

- Does your employer use CET Services?
- Does your employer do a monthly/quarterly/yearly walk through?

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MIOSHA CET Services

- **Hazard Survey**

  MIOSHA CET can conduct a hazard survey at no cost.
- Many workers' compensation carriers and other insurance companies offer expert services to help their clients evaluate safety and health hazards.

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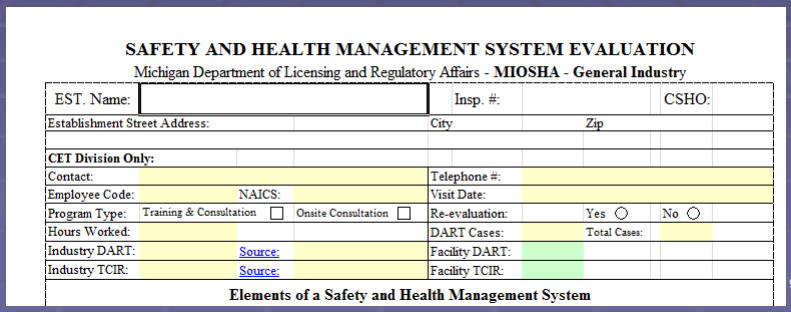
Safety & Health Management System Evaluation

- Form 512 used by CET and Enforcement
- Used to see if the 5 elements of an SHMS are present in the company



SAFETY AND HEALTH MANAGEMENT SYSTEM EVALUATION

Michigan Department of Licensing and Regulatory Affairs - **MIOSHA - General Industry**

EST. Name:			Insp. #:		CSHO:	
Establishment Street Address:			City		Zip	
CET Division Only:						
Contact:			Telephone #:			
Employee Code:	NAICS:		Visit Date:			
Program Type:	Training & Consultation ☐	Onsite Consultation ☐	Re-evaluation:	Yes ○	No ○	
Hours Worked:			DART Cases:	Total Cases:		
Industry DART:	Source:		Facility DART:			
Industry TCIR:	Source:		Facility TCIR:			

Elements of a Safety and Health Management System

97

Perform regular workplace inspections

- Regular workplace inspections tell you whether you've eliminated or controlled existing hazards and help you identify new hazards.
- Quarterly inspections by employees trained in hazard recognition are a good way to get the job done.

98

What's a worksite analysis and how often should it be done?

- A worksite analysis means that the worksite is looked at to identify and eliminate existing or potential hazards.
- There should be a comprehensive, baseline survey, with a system in place for periodic updates.

99

Worksite Analysis

- Worksite analysis involves a variety of worksite examinations to identify not only existing hazards, but also conditions and operations in which changes might create hazards.
- Effective management actively analyzes the work and the worksite, to anticipate and prevent harmful occurrences.

100

Worksite Analysis

- Numerous private consultants provide a variety of safety and health expert services.
- Larger businesses may find the needed expertise at the company or corporate level.

101

Change Analysis

- Anytime something new is brought into the workplace, whether it be a piece of equipment, different materials, a new process, or an entirely new building, new hazards may unintentionally be introduced.

102

Change Analysis

- Before considering a change for a worksite, it should be analyzed thoroughly beforehand.
- Change analysis helps in heading off a problem before it develops.

103

Routine site safety and health inspections

- Routine site safety and health inspections are designed to catch hazards missed at other stages.
- This type of inspection should be done at regular intervals, generally on a weekly basis.

104

Routine site safety and health inspections

- In addition, procedures should be established that provide a daily inspection of the work area. You can use a checklist already developed or make your own,

105

Best Practice Example Steel Industries

Steel Industries Inc
SAFETY AUDIT CHECKLIST

Auditor: _____ Date: _____

Loc. / Dept: _____ Plant #: _____

Items	Compliant	Non Compliant	Comments
1. Check chains, slings and straps for load rating and condition.			
2. Check all electrical panels to make sure they are accessible and marked.			
3. Check enters / exit doors to make sure they are marked and not blocked.			
4. Check eyewash stations – full canister / no rust, and covered.			
5. Check fire extinguishers for pressure and pin in place.			
6. Check ladders and lifting equipment.			
7. Check that all containers storing liquids are marked and stored in the proper location.			
8. Check loading dock wells for chock, warning lights, and restraints.			
9. Check to make sure Lockout / Tagout procedures are being followed.			
10. Check that all guards are in place on machines.			
11. Check manipulators for leaks and condition of operation.			
12. Check all overhead crane pendant controls for proper markings.			
13. Check overall organization in the department.			
14. Check to make sure all employees are wearing proper PPE.			
15. Check stairwells for lighting, clean and not debris.			
16. Check areas for trip hazards.			
17. Check for bird droppings or similar matter; affected area must be dampened with Bleach, Lysol or other similar disinfectant then shoveled to receptacle. DO NOT DRY SWEEP.			
18. Check for 10CFR21 postings. Form F6.2.2.9 F6.2.2.11 Must have one posting in shop area and one posting in office area.			

R6.4.0 Safety Audit Checklist 3/15/2010

106

MIOSHA Self Inspection Checklist CET #0156

Michigan Department of Licensing & Regulatory Affairs
Consultation Education and Training Division

Self-Inspection Checklist

		Self-Inspection Checklist	
		"OK"	Action Needed
1.	Is there a copy of the MIOSHA Occupational Safety and Health Act in your place of business, and is kept where it is accessible to all employees?	☐	☐
2.	Is the MIOSHA WORKPLACE POSTER displayed in your place of business where all employees are likely to see it, as required?	☐	☐
3.	Are you aware of the requirement to report all workplace fatalities and any serious accidents (where three or more are hospitalized) to the MIOSHA office within 8 hours?	☐	☐
4.	Are workplace injury and illness records being kept as required by OSHA?	☐	☐
5.	Are you aware that the OSHA annual summary of workplace injuries and illnesses must be posted by February 1 and must remain posted until April 30?	☐	☐
6.	Are you aware that employers with 10 or few employees are exempt from the OSHA recordkeeping requirements, unless they are part of an official BLS or state survey and have received specific instructions to keep records.	☐	☐
7.	Have you demonstrated an active interest in safety and health matters by defining the policy of the business and communicating this to all employees?	☐	☐
8.	Do you have a safety committee or group that allows participation of employees in safety and health activities?	☐	☐
9.	Does the safety committee or group meet regularly and report, in writing, its activities?	☐	☐
10.	Do you provide safety and health training for all employees requiring such training, and is it documented?	☐	☐
	WORKPLACE		
	Electrical Wiring, Fixtures and Controls		
1.	Do you have electrical installations in hazardous dust or vapor areas, and if so do they meet the NEC for hazardous locations?	☐	☐
2.	Are all electrical cords strung so they do not hang on pipes, nails, hooks, etc.?	☐	☐
3.	Is all conduit, BX cable, etc., properly attached to all supports and tightly connected to junction and outlet boxes?	☐	☐
4.	Is there no evidence of frayed or worn electrical cords?	☐	☐

MIOSHA/CET #0156 (Rev. 1998) 1

107

MIOSHA Self Inspection Checklist CET #0156

		"OK"	Action Needed
	Electrical Wiring, Fixtures and Controls (continued)		
5.	Are metallic cable and conduit systems properly grounded?	☐	☐
6.	Are portable electric tools and appliances grounded or of the double insulated type?	☐	☐
	EXITS AND ACCESS		
1.	Are all exits visible and unobstructed?	☐	☐
2.	Are all exits marked with a readily visible sign that is properly illuminated?	☐	☐
3.	Are there sufficient exits to ensure prompt escape in case of emergency?	☐	☐
4.	Sufficient for occupancy (not less than 2 for each area)?	☐	☐
5.	Doors easy to open or have panic hardware (no dead bolts, hooks & eyes, etc.)?	☐	☐
6.	Clearly visible or marked route?		
7.	Non-exit doors marked?	☐	☐
8.	Signs: painted (8" letters)?	☐	☐
9.	Emergency exits maintained clear of ice and snow?	☐	☐
	FIRE PROTECTION		
1.	Are fire extinguishers provided in adequate number and type?	☐	☐
2.	Are fire extinguishers recharged regularly and properly noted on inspection tag?	☐	☐
3.	Are fire extinguishers mounted in readily accessible locations?	☐	☐
4.	Are plant employees periodically instructed in the use of extinguishers and fire protection procedures?	☐	☐
5.	Proper types, sizes, and number?	☐	☐
6.	Locations marked and accessible?	☐	☐
7.	Inspected monthly and annually?	☐	☐
8.	Employees trained in use?	☐	☐
9.	Covered containers for collection of waste?	☐	☐
10.	Combustible scrap and debris removed from work areas at regular intervals?	☐	☐
	HOUSEKEEPING AND GENERAL WORK ENVIRONMENT		
1.	Are NO SMOKING signs prominently posted for areas containing combustibles and flammables?	☐	☐
2.	Are covered metal waste cans used for oily and paint soaked waste?	☐	☐
3.	Operator work stations clear of clutter and other hazards?	☐	☐

2

108

MIOSHA Self Inspection Checklist CET #0156

MACHINES AND EQUIPMENT

MATERIALS

109

MIOSHA Self Inspection Checklist CET #0156

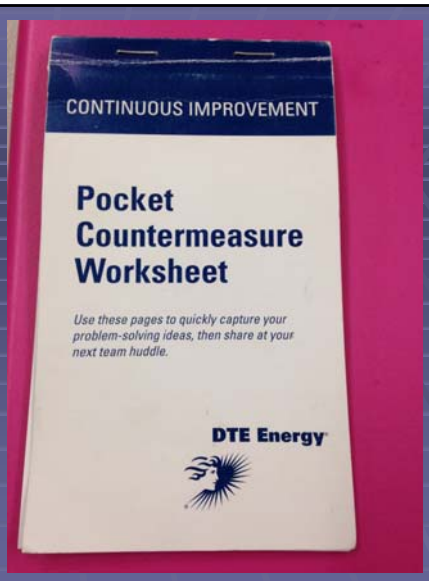
WELDING AND CUTTING

PERSONAL PROTECTIVE EQUIPMENT IN USE

110

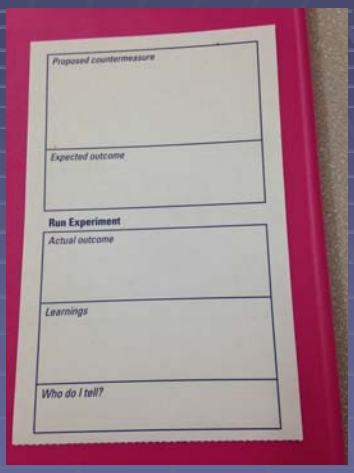
Best Practice- DTE Energy

DTE Energy



111

Best Practice- DTE Energy



112

Perform a JSA/JHA

- JSA = Job Safety Analysis
- JHA = Job Hazard Analysis
- Pre-job checklist

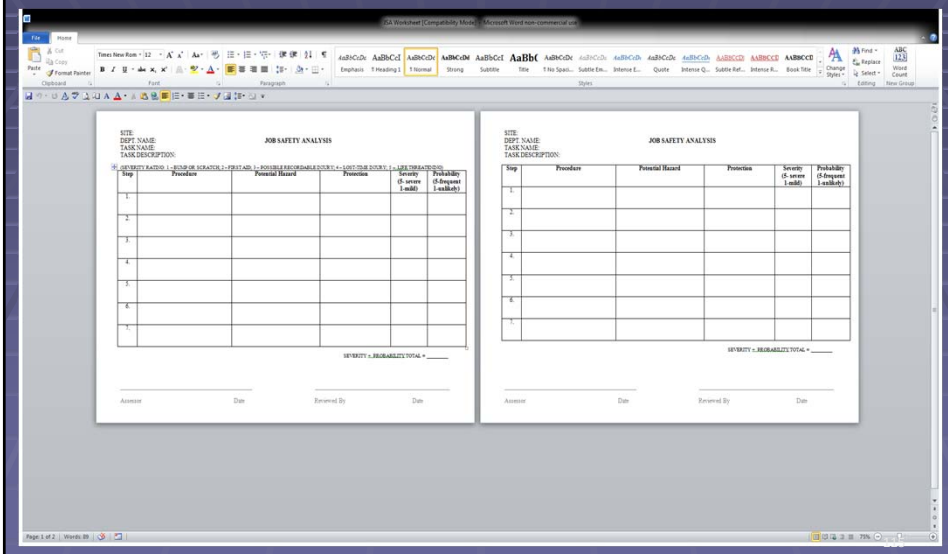
113

JSA/JHA

- One of the most commonly used techniques is the Job Safety Analysis (JSA) or Job Hazard Analysis (JHA).
- Jobs that were initially designed with safety in mind may now include hazards or improper operations. When done for every job, this analysis periodically puts processes back on the safety track.

114

JSA



New Hazards

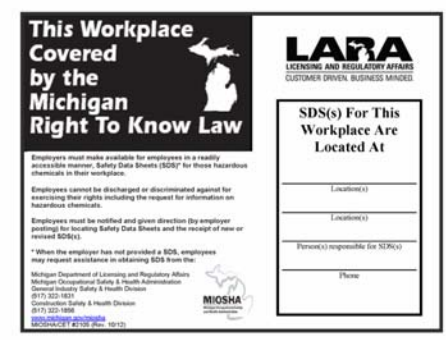
- Before introducing a new procedure, new work process or a new piece of equipment
- Do you share this information with your other locations/facilities (best practices)

116

Use SDS to identify chemical hazards

117

Revised Posters – MSDS to SDS



118

Catching Hazards that Escape Controls

- After hazards are recognized and controls are put in place, additional analysis tools can help ensure that the controls stay in place and other hazards don't appear.

119

Other Tools

- These other tools include:
  - Employee reports of hazards.
  - Accident and incident investigations.
  - Near miss reports.
  - 300 a logs.
  - Injury and illness trend analysis.

120

Investigate accidents

- Investigate accidents to determine root causes.
  - Most accidents are preventable. Each one has a cause — poor supervision, inadequate training, and lax safety policies are examples.
  - When you eliminate the cause, you can prevent another accident.

121

5.Safety & Health Training

- Your employees need to know their safety responsibilities, what hazards they could be exposed to, and how to control their exposures.
- New-employee orientations, emergency drills, classroom sessions, and hands-on practice are good ways they can learn. And don't forget managers and supervisors.

122

Best Practice – Steel Industries

SAFETY FLASH

Safety Objective: Chain and Lifting Strap Safety
Date: July 7, 2011
WHO: All Shop Personnel who use cranes and related lifting equipment and hardware
WHERE: All Plants

FOR SAFE OPERATION: For personal safety, prior to use inspect all lifting hardware (hooks, chains, straps & clamps) for any condition that would compromise lifting safety. When in doubt remove said lifting device from operation and contact immediate supervisor or safety office for determination.
Straps: I.D. Tag, check for cuts, tears, abrasions, oil soaking, etc
Chains: I.D. Tag, cracks, bent links or hooks, deep scratching, etc
Plate Clamps: I.D. Tag, bent cams, cracks, loose fittings
Hooks: Check for bent tip no more than 10degrees from vertical center, throat hook opening not greater than 15%
I.D. Tags are very important as they denote serial number and lifting capacity of the device. If tag is not present device cannot be used for lifting.

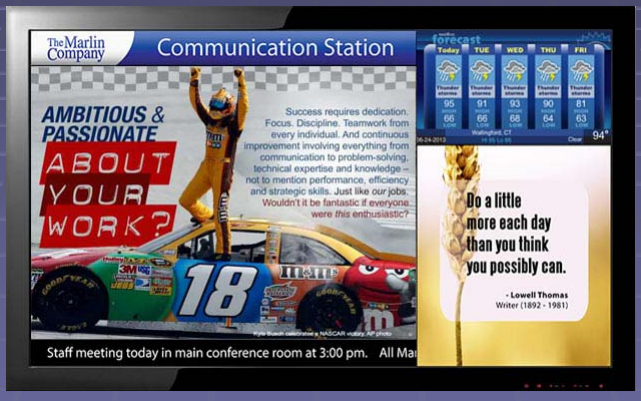
Safety is about behavior...adopt safe working habits

Ameriforge

123

Best Practice – DTE Milford

DTE Energy



124

Training

- Refresher training
- Re-training when there's an accident or near miss
- Training when transferred to a different job
- Forklift Training
- Right to know training
- Training on evacuation / emergency preparedness
- Annual Training

125

Objective 4

Plan Evaluation

Evaluating your SHMS

126

Evaluate the SHMS

- Evaluation of the results over time permits the process to continue to be improved.
- Break down the SHMS into small sections and use the PDSA to evaluate each section.

127

Plan-Do-Study-Act (PDSA)

128

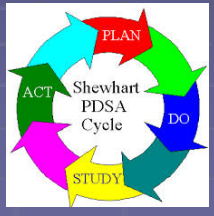
When do I use PDSA?

- You can use PDSA to monitor the achievements and shortfalls of a process.
- It can also be used to implement and review best practices and benchmarks.

129

How do I use PDSA?

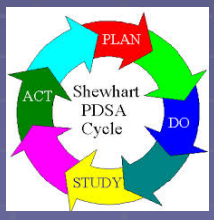
- **Plan** the processes you need to achieve the desired improvements for.



130

“Plan”

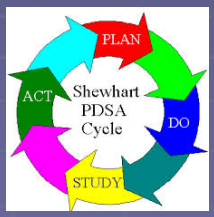
- Consider the following in the **plan** stage
  - Select and describe the problem
  - Study the present system
  - Identify possible causes



131

“Do”

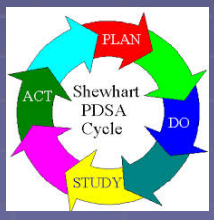
- DO the changes by implementing the processes.



132

"Study"

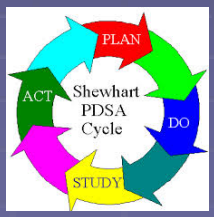
- "Study" if the changes achieve the desired improvements.
- Analyze the results and take notes.



133

"Act"

- Take "action" if there is a deviation from the operational standard to correct the process.



134

PDSA Video

- https://www.youtube.com/watch?v=xzAp6ZV5ml4

135

Objective 5

Group Techniques

136

Group Techniques

- 5 Why's – Root Cause Analysis
- Nominal Group Technique (NGT)
- 6 Thinking Hats

http://youtu.be/lNj89T4ILAQ

137

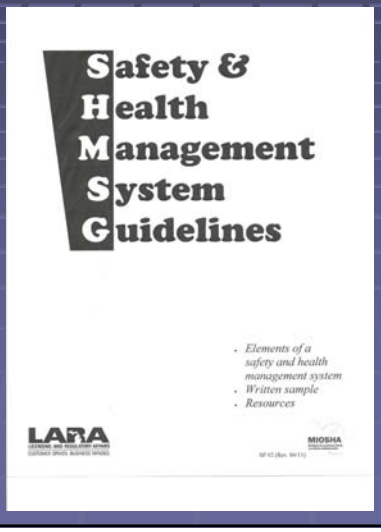
5-Whys (5Y) to a Root Cause

Level of Problem	Corresponding Level of Countermeasure
There is a puddle of oil on the shop floor.	Clean up the oil
Because the machine is leaking oil	Fix the machine.
Because we bought gaskets made of inferior material.	Change gasket specifications.
Because we got a good deal (price) on those gaskets	Change purchasing policies.
Because the purchasing agent gets evaluated on short-term cost savings.	Change the evaluation policy for purchasing agents – Root Cause.

138

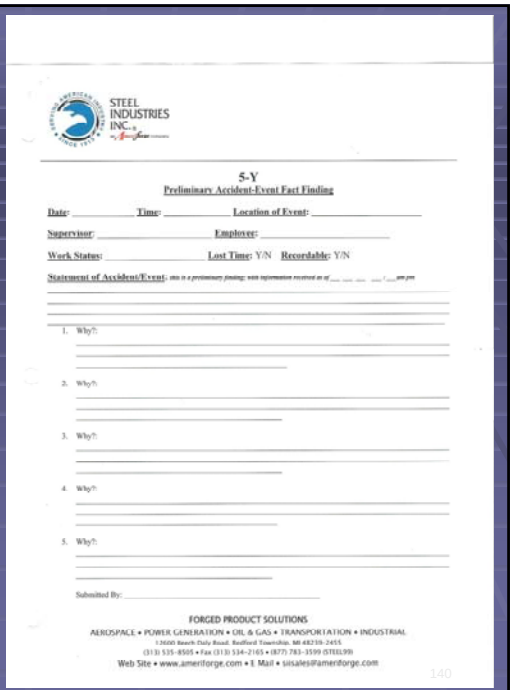
MIOSHA CET SP#02

- Sample written program for SHMS



139

5 Y's Example



STEEL INDUSTRIES INC.

5-Y

Preliminary Accident-Event Fact Finding

Date: _____ Time: _____ Location of Event: _____

Supervisor: _____ Employee: _____

Work Status: _____ Lost Time: Y/N Recordable: Y/N

Statement of Accident/Event: *this is a preliminary finding; with information received as of ____ ____, ____ ____:____ am/pm*

1. Why?:
2. Why?:
3. Why?:
4. Why?:
5. Why?:

Submitted By: _____

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140

Nominal Group Technique (NGT)

- Promotes creativity and objectivity.
- Benefits:
  - Balances participation across members.
  - Balances influence of individuals.
  - Produces more creative ideas and greater number of ideas than interacting groups.

141

Nominal Group Technique

- Results in greater satisfaction of participants.
- Reduces conforming.
- Confront issues rather than persons.
- Greater sense of closure and accomplishment.

142

Nominal Group Technique

- Limitations:
  - Requires advanced preparation.
  - Limited to single-purpose, single-topic meeting.
  - Needs agreement from all participants to use the same structured method.

143

Nominal Group Technique

- Preparations:
  - Room
    - Large enough for groups with tables
    - Far enough apart to limit distractions
    - U-shape with flip chart at open end of ‘U’
  - Supplies
    - Flip chart for each group (post-it or masking tape)
    - Voting slips

144

Nominal Group Technique

- Statement of Purpose:
  - Clarify members roles.
  - Remind importance of contribution and full participation is expected.
  - State the problem.
  - Indicate how the group's output will be used.

145

Committee Problem Solving Exercise 1: Solve for the Problem

1. Define the Issue – write it down!! (1 minute).
   - **What are the problems that cause unsuccessful safety committee meetings?**
2. Brainstorm & list your own ideas…silently. (3 minutes).
3. Round Robin – collect and record the ideas (10 minutes).
4. Refine the list – Clarify & Combine (3 minutes).

146

Exercise 1: Solve for the Problem

5. Determine the importance (3 minutes)
6. Record the ratings (3 minutes)
7. Total the points (3 minutes)
8. Assign a Priority Number (3 minutes)

147

NGT Scoring

Exercise 1	Exercise 2
First Choice Idea _____ 5 points	First Choice Idea _____ 5 points
Second Choice Idea _____ 4 points	Second Choice Idea _____ 4 points
Third Choice Idea _____ 3 points	Third Choice Idea _____ 3 points
Fourth Choice Idea _____ 2 points	Fourth Choice Idea _____ 2 points
Fifth Choice Idea _____ 1 point	Fifth Choice Idea _____ 1 point

148

Committee Problem Solving Exercise 2: Solve for a Solution

- ACTIVE - start solution statement with active verb.
- MEASURABLE - the solution should be measureable

149

Example of Problem – Solving Action Verbs

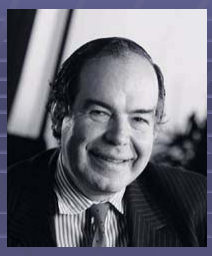
Objective:	Related Action Verbs			
Attitude Development	adjust criticize select	analyze decide	assess evaluate	choose pick
Skill Development	assemble construct count speak type demonstrate	prepare prove repair develop measure	compute copy solve transcribe write	process record design draw operate
Knowledge Development	cite contrast describe distinguish enumerate	identify name decide explain	compare define relate reproduce	list quote repeat differentiate

150

6 Thinking Hats

151

Edward De Bono

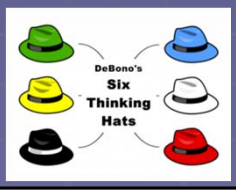


- 6 Thinking Hats
  - Parallel Thinking
    - A means for a group to plan thinking processes in a detailed and cohesive way, and in doing so, to think together more effectively.

152

6 Thinking Hats

- Systematic method of thinking
  - The group separates thinking into 6 distinct categories.
  - Each category has its own colored metaphorical “thinking hat”.
  - By mentally wearing and switching “hats”, you can easily redirect thoughts, the conversation or the meeting.



153

6 Thinking Hats Explanation

<iframe width="560" height="315" src="//www.youtube.com/embed/jT_z4hM3IWw" frameborder="0" allowfullscreen></iframe>

154

2 Main Purposes

- The first purpose is to simplify thinking by allowing a thinker to deal with one thing at a time.
- The second purpose is to allow a ***switch*** in thinking.

155

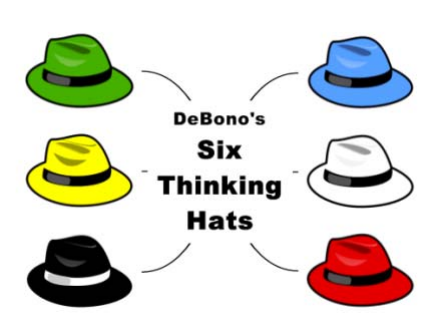
6 Hats Thinking

- Six Thinking Hats is a good technique for looking at the effects of a decision from a number of different points of view.
- It allows necessary emotion and skepticism to be brought into what would otherwise be purely rational decisions.

156

The 6 Thinking Hats

- They hats are always referred to by their color – not their function.



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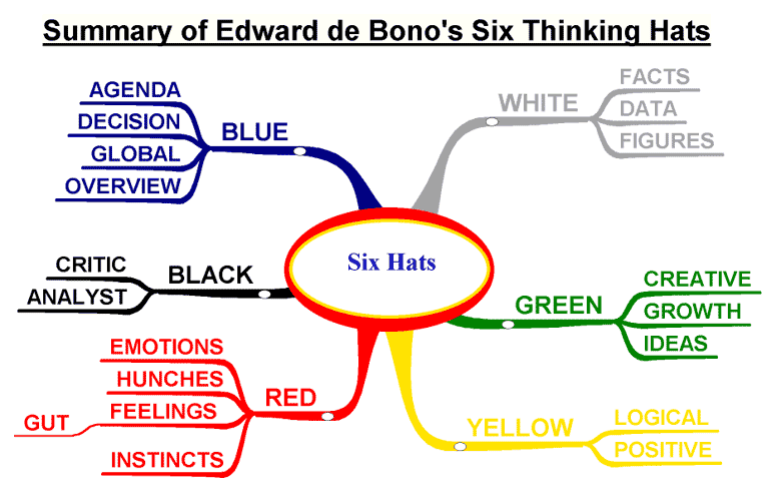
All of these thoughts at once?



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De Bono's Six Thinking Hats

The White Hat Information available and needed	**The Red Hat** Intuition, feelings, and hunches
The Black Hat Cautions and difficulties Where things might go wrong	**The Yellow Hat** Values and benefits Why something might work
The Green Hat Alternatives and creative ideas	**The Blue Hat** Managing the thinking process

160

Group Exercise

- **Everyone in the class works for ABC Company.**
- **ABC Company** wants to increase employee safety & health training.
- ABC Company employs 300 people.
- They run 2 shifts.

161

Class Exercise

- They are thinking about purchasing 8 new computers for the training.
- Each computer will cost $2,500. Total cost would be $20,000 for the 8 computers.
- To hire a presenter to train the employees would cost $2,500 per day.

162

Class Exercise

- They are thinking about purchasing 8 new computers for the training.
- Each computer will cost $2,500. Total cost would be $20,000 for the 8 computers.
- To hire a presenter to train the employees would cost $2,500 per day.

163

Day 2 objectives

Finish defining the 5 Critical Elements

1. Management Commitment
2. Employee Involvement
3. Hazard Prevention & Control
4. Worksite Analysis
5. Safety & Health Training

Plan Evaluations

Group Techniques

164

Assessment

- The purpose of this assessment is to validate the knowledge learned in class.
- Passing score of 70% correct is required.
- Class reference materials/books are not allowed to be used during the assessment.
- Collaboration/discussion with others is not allowed during the assessment.
- Answers will be reviewed after everyone completes and submits their assessment.

165

Online Transcript

https://webadvisor.macomb.edu

What?

- Check individual courses – Proficient / Not Proficient
- Track courses taken through the MTI
- Request a transcript to show certification
- Manage account information

How?

- Select *What's My User ID?*
- Key in the Last Name and SS# or Macomb ID
- Select *Log In*
- If you need help call 586.445.7506 or email scwebreg@macomb.edu

166

Thank You For Attending This Presentation

Michigan Occupational Safety & Health Administration
Consultation Education & Training Division
530 W. Allegan Street, P.O. Box 30643
Lansing, Michigan 48909-8143

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or
visit our website at
www.michigan.gov/miosha

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Michigan Occupational Safety & Health Administration
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